

SECTION C

This document covers thermostabilized vegetable manicotti in tomato sauce packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-V-003, VEGETABLE MANICOTTI IN TOMATO SAUCE, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements document.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

C. Shelf life. The packaged food shall meet the minimum shelf life requirement of 36 months at 80°F.

D. Appearance.

(1) General. The finished product shall be cooked vegetable manicotti with tomato sauce. The packaged food shall be free from foreign materials.

(2) Manicotti. The pasta shall be from enriched wheat flour and shall contain a cheese filling with pieces of spinach and carrot. The pasta shall be rectangular-shaped, spread with a filling and rolled. The finished manicotti shall be intact and tubular in shape. The cheese filling shall be off white.

(3) Sauce. The sauce shall be dark red to reddish brown with pieces of tomatoes, onions, and flecks of herbs and spices.

E. Odor and flavor. The vegetable manicotti shall have the odor and flavor characteristic of manicotti with cheese and vegetable filling in a mild Italian flavored tomato sauce. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Pasta. The pasta shall be slightly soft to slightly firm.

(2) Cheese filling. The cheese filling shall be soft and slightly grainy with small pieces of vegetable.

(3) Sauce. The sauce shall be moderately thick with pieces of tomato and onion.

G. Weight.

(1) Net weight. The average net weight shall be not less than 8.0 ounces. No individual pouch shall have a net weight of less than 7.5 ounces.

(2) Manicotti weight. The average weight of filled vegetable manicotti in an individual pouch shall not be less than 4.0 ounces. The individual weight of filled vegetable manicotti in a pouch shall be not less than 3.5 ounces.

H. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

I. Analytical requirements.

(1) Protein content. The protein content shall be not less than 4.0 percent.

(2) Fat content. The fat content shall be not greater than 6.0 percent.

(3) Salt content. The salt content shall be not less than 0.5 percent and not greater than 1.2 percent.

J. Vegetarian requirements. This product shall contain no ingredients, major or trace, and/or processing aids derived from the flesh, skin, blood, entrails, or bones of animals. This includes, but is not limited to oils, fats, fatty acids, and their esters (palmitic, stearic, oleic, and pelargonic acids), flavorings, gelling agents, coagulants, (rennet derived from calves or pepsin derived from swine which are used in cheese manufacture), binders, emulsifiers (mono/di-glycerides, sodium or magnesium stearate, polysorbate, sorbitans, monostearate, glycerin), fatty alcohol, aldehydes, and ketones, lactones, glycerol, amino acids, hydrolyzed proteins, enzymes, and enzyme modified products. Furthermore, these products shall contain no ethyl alcohol, or ingredients derived from or containing methyl alcohol. Milk and eggs, and ingredients derived from them such as yogurt, or cheese (produced without animal based rennet or pepsin), are allowed.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING INGREDIENTS ARE FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients. Ingredients may be as follows:

Manicotti (Pasta: enriched durum flour (niacin, ferrous sulfate, thiamine mononitrate, riboflavin, folic acid), water, whole egg, Filling: Ricotta cheese (whey, milk, cream, vinegar, xanthan gum, locust bean gum and guar gum) spinach, carrots, water, bread crumbs, salt, garlic puree, dry minced onions, sugar, basil, white pepper, xanthan gum), tomatoes, water, tomato paste, Mozzerella cheese (low-moisture part-skim Mozzerella cheese (milk, cultures, salt, enzymes), cream, sodium phosphates, salt lactic acid, natural flavors), onions, sugar, garlic, salt, modified food starch, basil, oregano, spices, red pepper.

SECTION D

D-1 PACKAGING

Product shall be filled into pouches and each pouch shall be packed in a carton in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches.

D-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink or any other contrasting color, which is free of carcinogenic elements. Prior to thermal processing of the pouches, the product name, lot number and filling equipment number shall be applied. All other marking may be applied before or after thermal processing.

(1) Product name (not less than 1/8 inch high). Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Pouch code includes: 1/

Lot Number
Filling equipment identification number
Official establishment number (for example, EST-38)
Retort identification number
Retort cook number

1/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 6 September 2001 would be coded as 1249). The Julian code shall represent the day the product was packaged into the pouch and processed. Sub-lotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Cartons.

(1) The cartons shall be clearly printed on one of the largest panels with permanent black ink as follows:

Product name (7/32 to 9/32 inch block letters)
Ingredients
Net weight
Name and address of packer
Code (same as pouch code, see pouches) 1/ 2/
USDA official inspection legend for the packer's plant
"Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations

1/ Code may be ink printed or embossed on the outside of any other panel except the largest panels of the carton.

2/ Official establishment number not required in carton code.

(2) Military nutrition information entitled "Military Rations Are Good Performance Meals" shall be printed on the entrée cartons large panel opposite to the panel printed with the data in D-2, B, (1) above. The information, provided by the contracting officer, shall be clearly printed with permanent black ink in an area no smaller than 4-1/4 inches by 6-3/4 inches.

D-3 PACKING

A. Packing for shipment to ration assembler. Seventy-two pouches (of the same product) in cartons shall be packed flat or on edge in a snug-fitting fiberboard shipping container conforming to style RSC, type CF, class domestic, grade 200 of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DPSC Form 3556, Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations/tests and methods of inspection cited in this section and in Section 4 of MIL-PRF-44073.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract

Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I. The pouches shall be immersed in 140°F to 190°F water for 10 minutes prior to conducting the product examination.

TABLE I. Product defects 1/ 2/ 3/ 4/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not vegetable manicotti with tomato sauce.
102		Manicotti not intact or not tubular shaped.
	201	Pasta not off white in color or not rectangular-shaped, spread with a filling and rolled.
	202	Filling not cheese with pieces of spinach and carrot or not off white color.
	203	Color of sauce not dark red to reddish brown with pieces of tomatoes, onions, and flecks of herbs and spices.
		<u>Odor and flavor</u>
103		Odor or flavor not cooked vegetable manicotti with cheese and vegetable filling in a mild Italian flavored tomato sauce.
	204	Sauce not a mild Italian odor or flavor.
		<u>Texture</u>
	205	Pasta not slightly soft to slightly firm.
	206	Cheese filling not soft or not slightly grainy with small pieces of vegetable.
	207	Sauce not moderately thick with pieces of tomato and onion.
		<u>Weight</u>
	208	Net weight of an individual pouch less than 7.5 ounces. <u>5/</u>
	209	The individual weight of vegetable manicotti in a pouch less than 3.5 ounces. <u>6/</u>

1/ Presence of any foreign material such as, but not limited to dirt, insect parts, hair, wood, glass, metal, or mold, or foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Product not verified by a certificate of conformance as meeting the vegetarian requirements shall be cause for rejection of the lot.

4/ Verification of the enriched wheat flour shall be with the statement of ingredients on the label.

5/ Sample average net weight less than 8.0 ounces shall be cause for rejection of the lot.

6/ Sample average weight of vegetable manicotti less than 4.0 ounces shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Testing for commercial sterility shall be in accordance with MIL-PRF-44073.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed pouches shall be determined by weighing each sample on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1 ounce.

(4) Manicotti weight. The pouch contents shall be poured into a flat-bottom container. The sauce shall be separated from the manicotti. The manicotti shall be weighed. Results shall be reported to the nearest 0.1 ounce.

(5) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches that have been selected at random from one production lot. The composite sample shall be prepared and analyzed in accordance with the latest edition of the Official Methods of Analysis of AOAC International (OMA). Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Packaging and labeling.

(1) Pouch material testing. The pouch material shall be examined for the characteristics listed in table I of MIL-PRF-44073. The lot size, sample unit, and inspection level criteria for each of the test characteristics are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Oxygen transmission rate	yards	1/2 yard	S-1
Water vapor transmission rate	yards	1/2 yard	S-1
Camouflage	yards	1/2 yard	S-1
Thermal processing	pouches	1 pouch	S-2
Environmental conditions	pouches	1 pouch	S-2

(2) Pouch examination. The pouches shall be examined for the defects listed in table II of MIL-PRF-44073. The lot size shall be expressed in pouches. The sample unit shall be one thermal processed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects, and 4.0 for minor defects. Two hundred sample units shall be

examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

(3) Examination of pouch and carton assembly. The completed pouch and carton assemblies shall be examined for the defects listed in table III of MIL-PRF-44073. The lot size shall be expressed in units of completed assemblies. The sample unit shall be one pouch and carton assembly. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects. Fifty sample pouch and carton assemblies shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table II below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE II. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1</u> /
	201	Contents more or less than specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

SECTION J REFERENCE DOCUMENTS

DPSC FORMS

DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-44073 Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers

D 5118 Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

AMSSB-RCF-FN (Valvano/4259)

8 April 2002

TO: DSCP-HRAA (LeCollier/3625)

Subject: (ES02-105) Technical Inquiry; Various MRE Documents (listing below); Clarify Carton labeling information

Ref: Quality Summit Mar 13, 2002, Industry One on One Sessions.

1. Based on discussions at referenced meeting, the U.S. Army Soldier and Biological Chemical Command, Soldier Systems Center (SBCCOM) has decided to clarify the carton labeling information since the requirement as written has been misinterpreted.

2. SBCCOM requests that DSCP implement the following change to the listed subject documents for all current, pending and future procurements until the documents are formally amended or revised:

In Section D, D-2 Labeling, B Cartons: Delete Footnote 1 entirely and insert:

"1/ Code may be ink printed on any outside carton panel. Code may be embossed on any outside carton panel except the largest panels of the carton."

3. The affected MRE entrée related documents are as follows:

Clam Chowder, New England style, Pouch	PCR-C-045	25 Oct 01
Pork Rib, Boneless, Imitation, Pouch	PCR-P-028	25 Oct 01
Fruits, Wet Pack, Pouch	PCR-F-002A	24 Oct 01
Vegetable Manicotti, Pouch	PCR-V-002	24 Oct 01
Beef Roast w/Vegetables, Pouch	PCR-B-035	24 Oct 01
Chili and Macaroni, Pouch	PCR-C-027	15 Nov 00
Beef Stew, Pouch	PCR-B-020	15 Nov 00
Beef Ravioli in Meat Sauce, Pouch	PCR-B-021	15 Nov 00
Beef w/Mushrooms in Sauce, Pouch	PCR-B-022	15 Nov 00
Beef Patty, Grilled, Pouch	PCR-B-029	15 Nov 00
Beefsteak, Grilled w/Mushroom Gravy, Pouch	PCR-B-030	15 Nov 00
Pork Chop, Jamaican, Pouch	PCR-P-012	15 Nov 00
Seafood Tortellini, Pouch	PCR-S-011	15 Nov 00
Turkey Breast, in Gravy w/Potatoes, Pouch	PCR-T-004	15 Nov 00
Country Captain Chicken, Pouch	PCR-C-019A	31 Jul 00
Jambalaya w/Ham & shrimp, Pouch	PCR-J-001	30 Sep 99
Beef Enchilada in Sauce, Pouch	PCR-B-010 (1)	30 Sep 99
Potatoes, Mashed, Pouch	PCR-P-011	30 Sep 99
Black Bean and Rice Burrito, Pouch	PCR-B-0002	17 Dec 97
Spaghetti w/Meat Sauce, Pouch	PCR-S-0002	5 Nov 97
Pork Chow Mein, Pouch	PCR-P-0002	5 Nov 97
Chicken and Rice, Pouch	PCR-C-0005	5 Nov 97
Chicken Stew, Pouch	PCR-C-0006	5 Nov 97
Beef Frankfurters, Pouch	PCR-B-0003	5 Nov 97
Pasta w/Vegetables in Cheese Sauce, Pouch	PCR-P-0001	22 Sep 97
Noodles, Buttered, Pouch	PCR-N-0001	22 Sep 97
Meatloaf w/Gravy, Pouch	PCR-M-0001	22 Sep 97
Chicken Breast w/Salsa, Pouch	PCR-C-0002	22 Sep 97
Chicken Breast in Thai Sauce, Pouch	PCR-C-0003	22 Sep 97
Beef in Teriyaki Sauce w/Vegetables, Pouch	PCR-B-0001	22 Sep 97
Apple Slices in Spice Sauce, Pouch	PCR-A-0001	4 Apr 97

4. Several MRE related component documents, i.e. breads, cakes, cookies, do not require a carton.

5. Several MRE entrée related documents from the Oct 1998 time frame did not contain the specific labeling of pouches and cartons inclusively. They referenced MIL-PRF-44073 in the Section D requirements.

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6. Therefore, SBCCOM requests that DSCP implement the following change to the Quality Assurance Provisions and Packaging Requirements for MIL-PRF-44073E Packaging of Foods in Flexible Pouches for all current and pending procurements until the document is formally amended or revised:

In III, A, 1 Labeling and marking, b, Cartons: Delete Footnote 1 entirely and insert:

"1/ Code may be ink printed on any outside carton panel. Code may be embossed on any outside carton panel except the largest panels of the carton."

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